ABSTRACT

A mouse controller includes a platform mounted on a base for a range of movement in a plane relative to the base of at least ½ inch (12.5 mm) in each of two different directions (preferably mutually perpendicular directions). A pair of flat, elongated coils (Lorentz voice coils) are mounted on the platform with their longitudinal axes extending one in each of the two directions. Each of the coils cooperates with at least one magnet fixed to the base. The sizes of the magnets and of the coils and the relative positions of the cooperating coils and magnets are made or their operation controlled so that, in the range of relative movement between the platform and base, preselected forces between the coils and the magnets may be generated by a control computer. Preferably the projected area of the field from each of the permanent magnets onto the coil with which it cooperates will be substantially constant regardless of the position of the platform within the range so that the same current is required to generate the same force anywhere within the range. The control computer is programmed to activate the coils to controllably apply forces to the platform and thereby to facilitate movement of the platform and feed back tactile sensations to the operator.